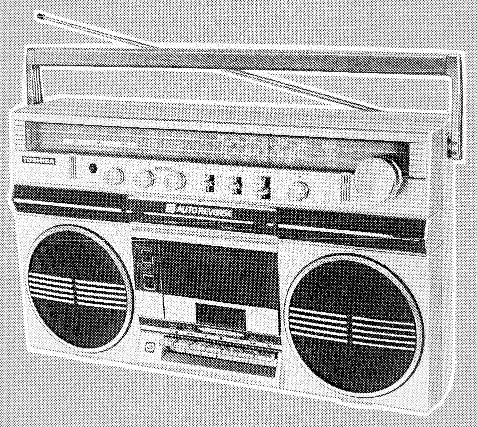
SERVICE DATA
FILE NO. 110-286

TOSHIBA
STEREO RADIO CASSETTE RECORDER
RT-170S



SPECIFICATIONS

Cassette tape used:	Normal: C-30, C-60, C-90, C-120
Tape speed:	4.8 cm/sec.
Track system:	Four-track two-channel stereophonic
Recording system:	AC bias (85 kHz)
Erasing system:	AC erasing
Frequency response:	Normal: 80 Hz to 10 kHz
Receiving frequency:	FM: 88 MHz to 108 MHz SW: 5.9 MHz to 15.4 MHz MW: 525 kHz to 1605 kHz LW: 145 kHz to 270 kHz
Intermediate frequency:	FM: 10.7 MHz LW/MW/SW: 460 kHz
Antenna:	FM/SW: telescopic antenna LW/MW: ferrite-core antenna
Speakers:	120 mm (dia.) dynamic x 2 20 mm (dia.) piezo-electric type x 2
Jacks:	[MIC] jack x 2, impedance 200 ohm to 2K ohm [REC/PB] jack x 1 [PHONES] jack x 1
Power supply:	AC 220 to 240V, 50 Hz DC 12V (SUM-1 "D" size x 8)
Power consumption:	18W
Dimensions (W x H x D):	460 x 263 x 119 (mm)
Weight:	4.2 kg (without batteries)

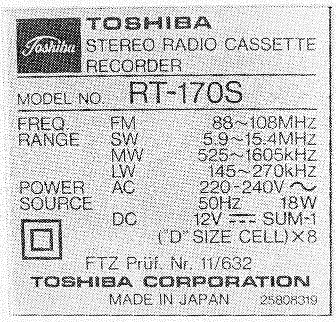
Specifications are subject to change without notice.

TE, TU, IT

CONTENTS

1. OPERATING CONTROLS 3
2. DISASSEMBLY INSTRUCTIONS 4
3. HANDLE REMOVAL 5
4. METHOD OF P.R.C. REPAIRING 5
5. BLOCK DIAGRAM 5
6. DIAL CORD RESTRINGING 6
7. ALIGNMENT INSTRUCTIONS .... 7 to 10
8. ELECTRICAL PARTS LOCATIONS 11
9. SCHEMATIC DIAGRAM 12
10-1. MECHANISM EXPLODED VIEW (UPPER) 13
10-2. MECHANISM EXPLODED VIEW (LOWER) 14
11. PARTS LIST (MECHANISM) 15
12. CABINET EXPLODED VIEW 16
13. PARTS LIST (CABINET) 17
14. PARTS LIST .... 18 to 20

Nameplate



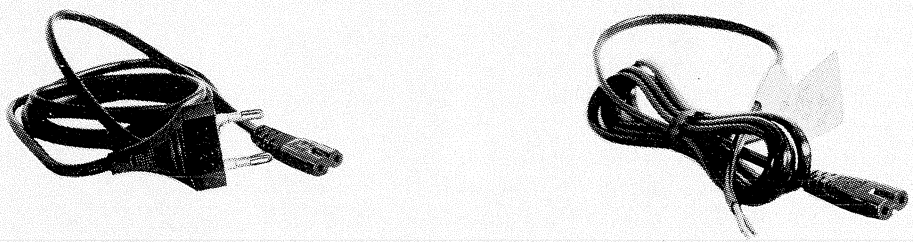
TOSHIBA
STEREO RADIO CASSETTE RECORDER

MODEL NO. RT-170S

FREQ. RANGE	FM	88~108MHz
	SW	5.9~15.4MHz
	MW	525~1605kHz
	LW	145~270kHz
POWER SOURCE	AC	220-240V ∼ 50Hz 18W
	DC	12V ⎓ SUM-1 ("D" SIZE CELL)×8

FTZ Prüf. Nr. 11/632
TOSHIBA CORPORATION
MADE IN JAPAN 25808319

Power Cord



TE, IT

TU

1. OPERATING CONTROLS

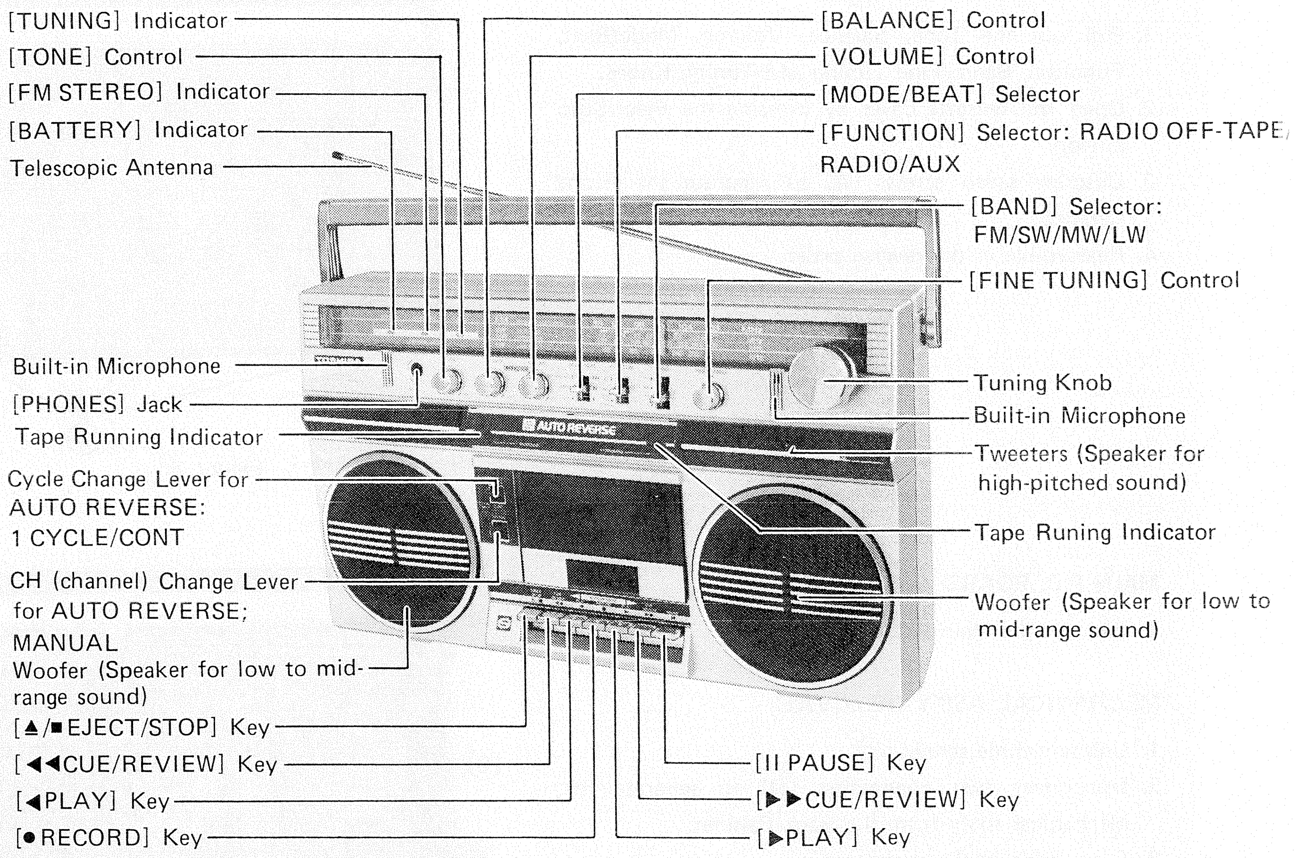

[TUNING] Indicator
[TONE] Control
[FM STEREO] Indicator
[BATTERY] Indicator
Telescopic Antenna
Built-in Microphone
[PHONES] Jack
Tape Running Indicator
Cycle Change Lever for AUTO REVERSE: 1 CYCLE/CONT
CH (channel) Change Lever for AUTO REVERSE; MANUAL
Woofer (Speaker for low to mid-range sound)
[▲/■EJECT/STOP] Key
[◀◀CUE/REVIEW] Key
[◀PLAY] Key
[●RECORD] Key
[BALANCE] Control
[VOLUME] Control
[MODE/BEAT] Selector
[FUNCTION] Selector: RADIO OFF-TAPE
RADIO/AUX
[BAND] Selector: FM/SW/MW/LW
[FINE TUNING] Control
Tuning Knob
Built-in Microphone
Tweeters (Speaker for high-pitched sound)
Tape Runing Indicator
Woofer (Speaker for low to mid-range sound)
[II PAUSE] Key
[▶▶CUE/REVIEW] Key
[▶PLAY] Key
AUTO REVERSE

Figure 1.

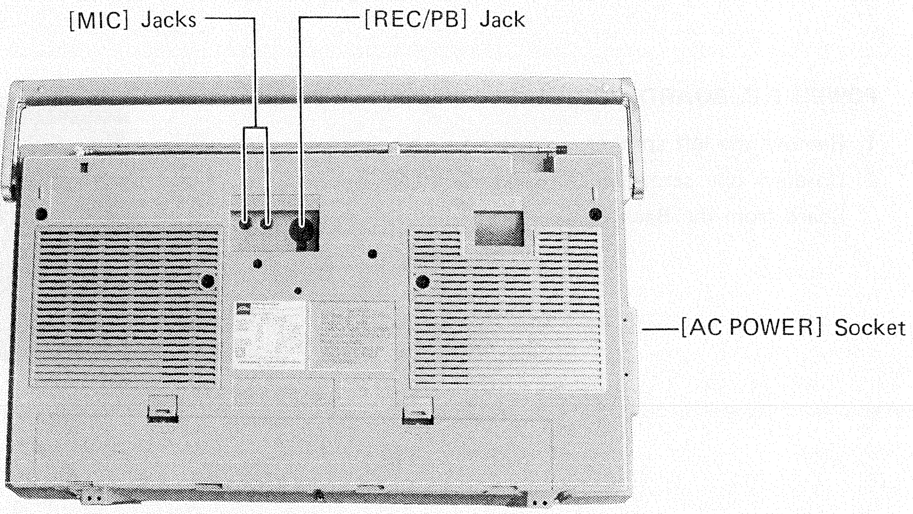

[MIC] Jacks
[REC/PB] Jack
[AC POWER] Socket

Figure 2.

2. DISASSEMBLY INSTRUCTIONS

FRONT CABINET REMOVAL

1. Pull out the Tone, Balance, Volume, Mode/Beat, Function, Band, Fine Tuning and Tuning Knobs.
2. Open the cassette cover by pressing the Eject/Stop button.
3. Unscrew seven screws Ⓐ to separate the Front Cabinet.
4. Reassemble in the reverse order.

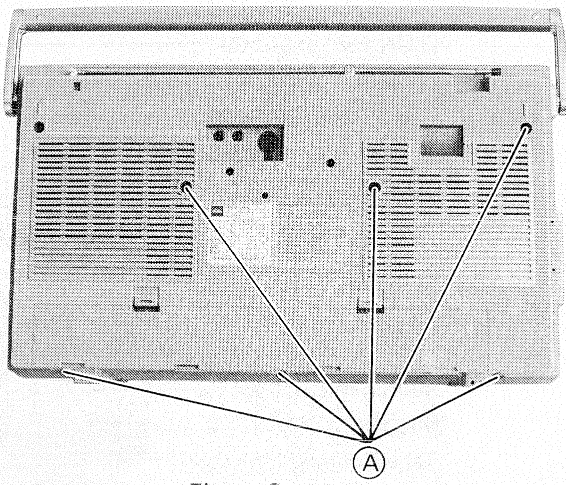


Figure 3.

MAIN P.C. BOARD REMOVAL

1. Pull out the Main P.C. Board.

MECHANICAL ASS'Y REMOVAL

1. Unscrew three screws Ⓑ.
2. Disconnect two connectors Ⓓ to separate the Mechanical Ass'y from the Back Cabinet.
3. Reassemble in the reverse order.

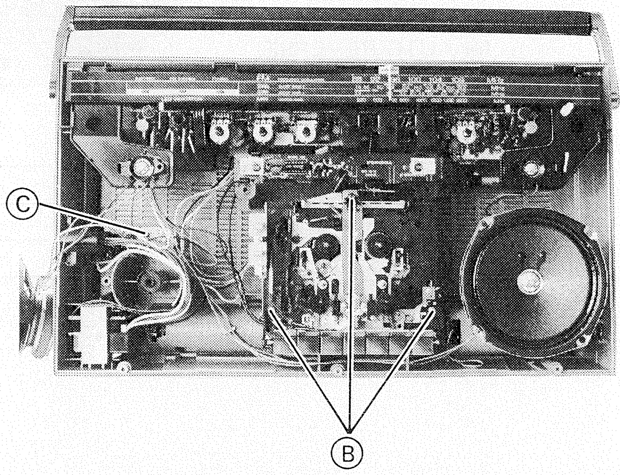


Figure 4.

POWER P.C. BOARD REMOVAL

1. Remove the left speaker.
2. Unscrew one screw Ⓒ to separate the Power P.C. Board from the Back Cabinet.

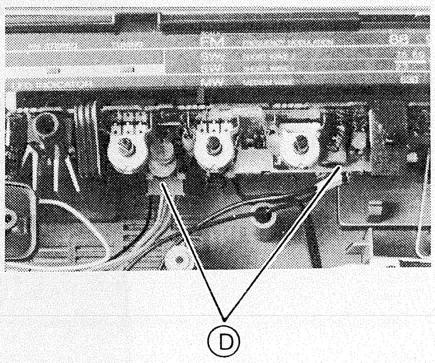


Figure 5.

3. HANDLE REMOVAL

When replacing the handle, remove it by cutting the handle washer shown in figure below with cutter etc.

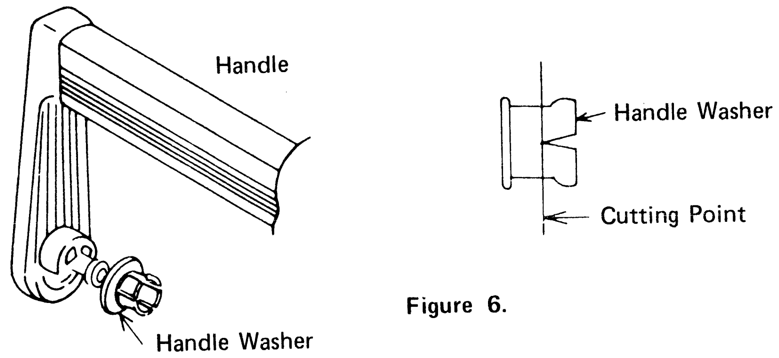

Handle
Handle Washer
Handle Washer
Cutting Point

Figure 6.

4. METHOD OF P.R.C. REPAIRING

Cut defective printed-resistor-circuit off with knife. See Figure 7. Solder the replacement resistor (See replacement resistor parts list) on the opposite side of printed-circuit-board. See Figure 8.

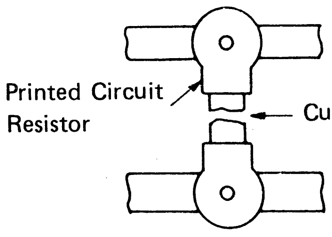

Printed Circuit Resistor
Cut Off

Figure 7.

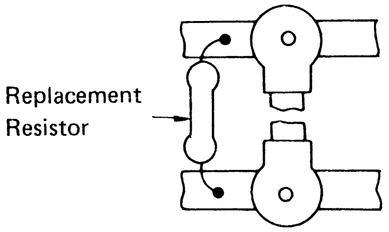

Replacement Resistor

Figure 8.

5. BLOCK DIAGRAM

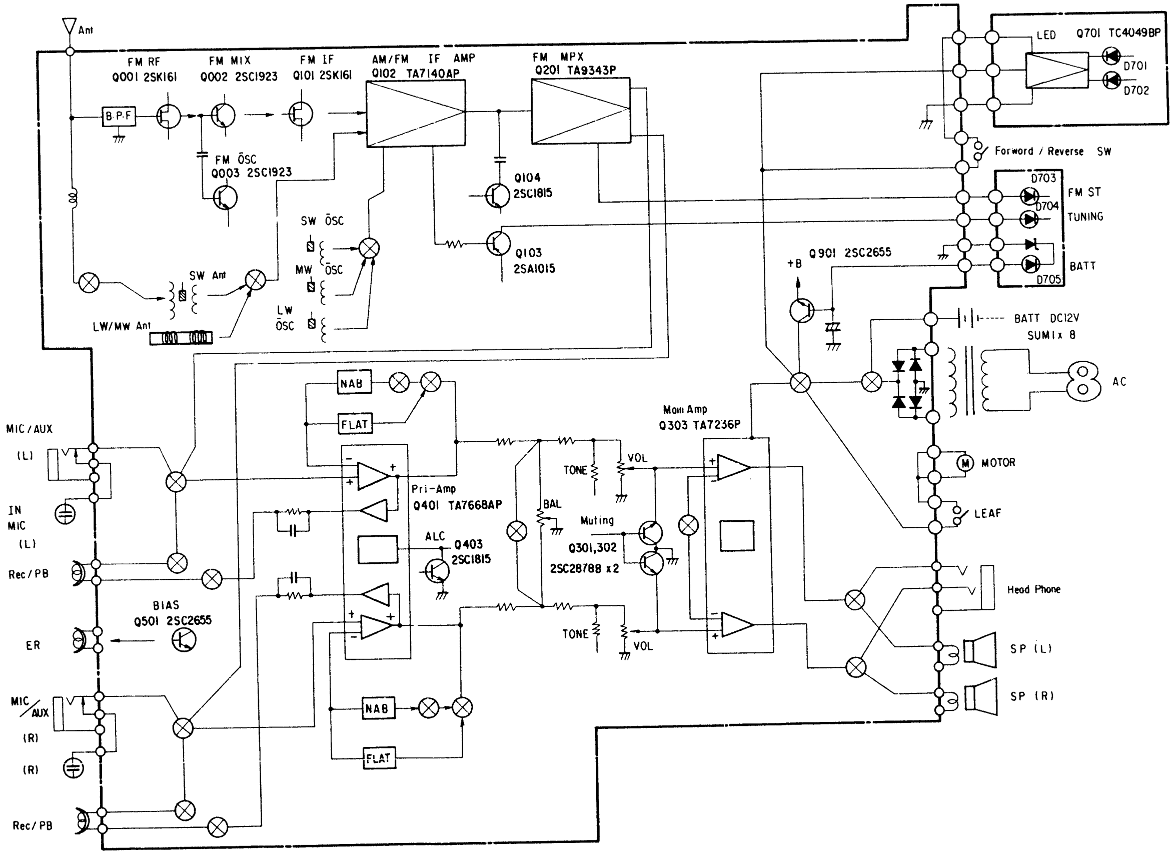

Ant
FM RF
Q001 2SK161
FM MIX
Q002 2SC1923
FM IF
Q101 2SK161
AM/FM IF AMP
Q102 TA7140AP
FM MPX
Q201 TA9343P
B.P.F
FM ŌSC
Q003 2SC1923
Q104
2SC1815
Q103
2SA1015
SW ŌSC
MW ŌSC
LW ŌSC
SW Ant
LW/MW Ant
LED
Q701 TC4049BP
D701
D702
Forword / Reverse SW
D703
D704
D705
FM ST
TUNING
BATT
Q901 2SC2655
+B
BATT DC12V
SUM1x 8
AC
MOTOR
LEAF
Head Phone
SP (L)
SP (R)
Main Amp
Q303 TA7236P
NAB
FLAT
Pri-Amp
Q401 TA7668AP
ALC
Q403
2SC1815
TONE
VOL
BAL
Muting
Q301,302
2SC28788 x2
MIC/AUX
(L)
IN
MIC
(L)
Rec/PB
BIAS
Q501 2SC2655
ER
MIC/AUX
(R)
(R)
Rec/PB

Figure 9.

6. DIAL CORD RESTRINGING

DIAL CORD RESTRINGING

1. Turn the Tuning capacitor fully clockwise.
2. Set the Drum on the Tuning capacitor with a screw.
3. Thread the Dial cord into the Spring after tying the Cord.
4. Wind the Dial cord in numerical order and keep the Dial cord pulled at the position ⑥, wind it on the Drum through ⑦ and ⑧.
5. Hook the Spring on the Drum.

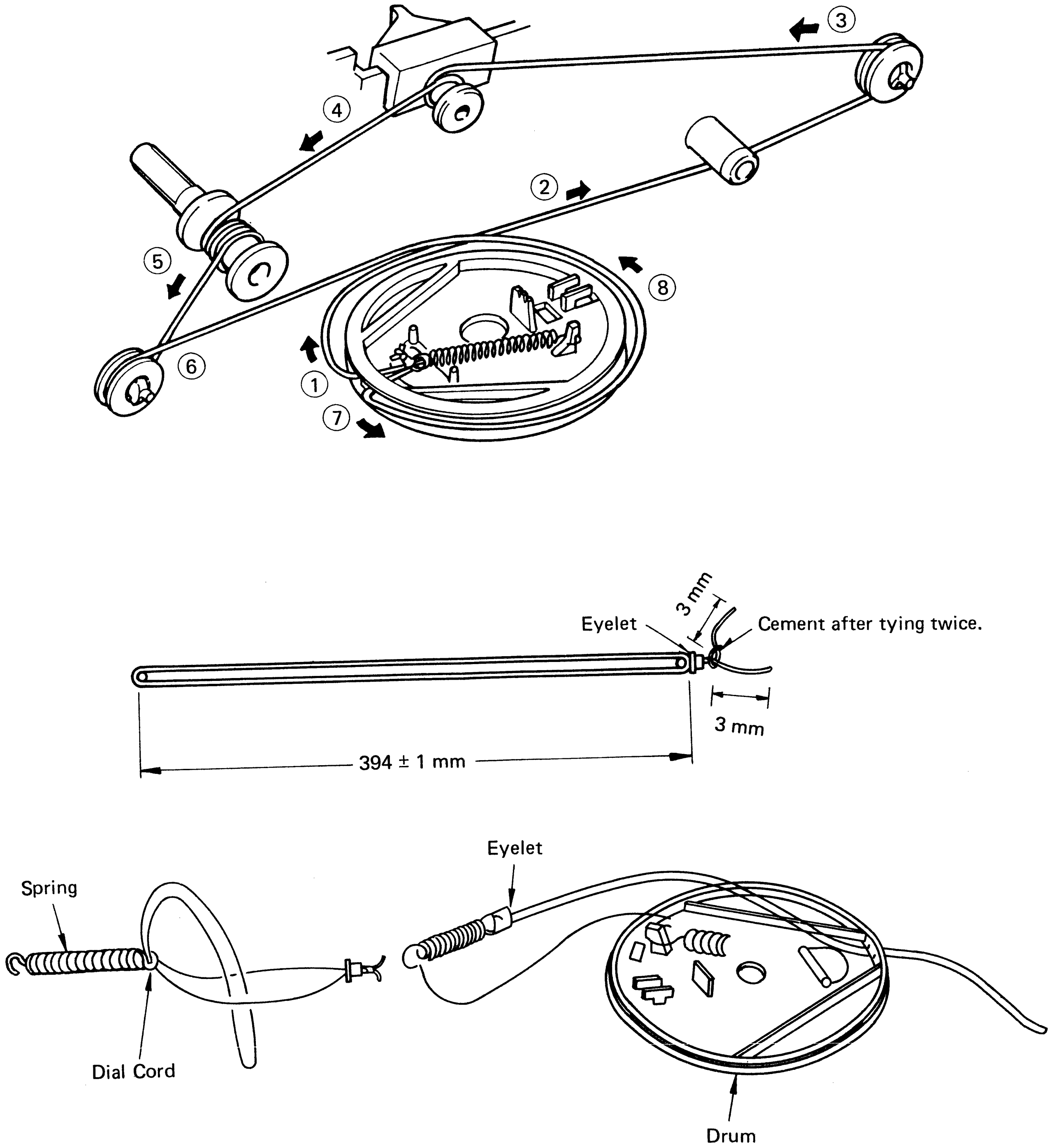

①
②
③
④
⑤
⑥
⑦
⑧
Eyelet
3 mm
Cement after tying twice.
3 mm
394 ± 1 mm
Spring
Eyelet
Dial Cord
Drum

Figure 10.

7. ALIGNMENT INSTRUCTIONS

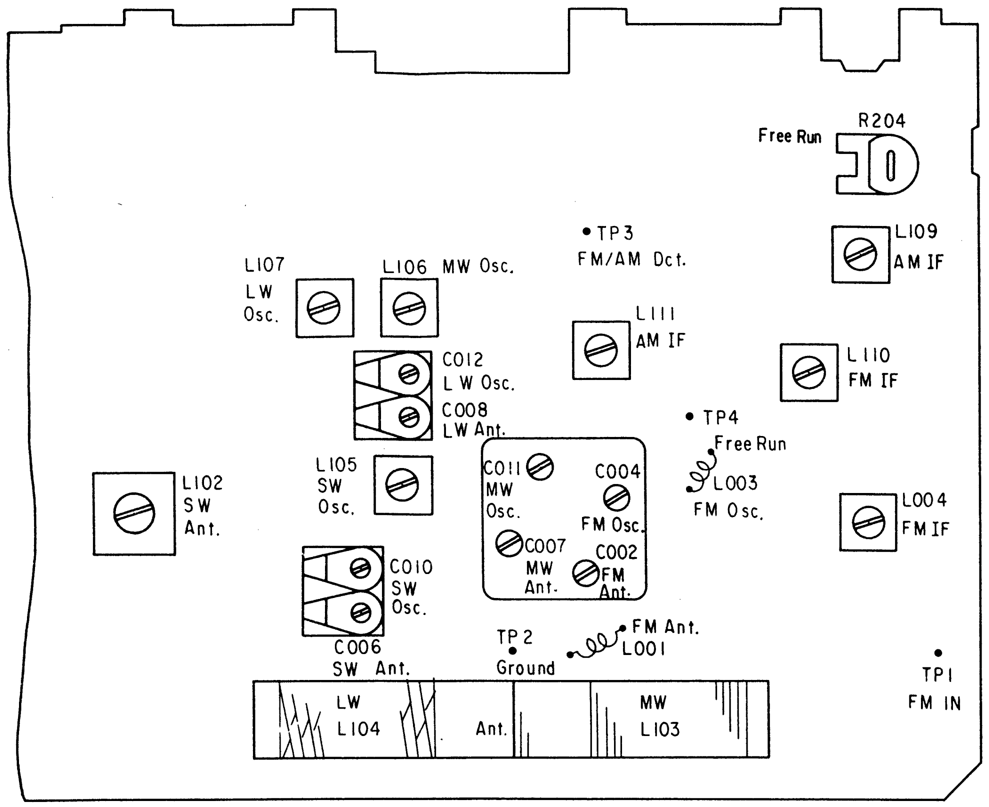

Free Run
R204
L107
LW
Osc.
L106 MW Osc.
TP3
FM/AM Oct.
L109
AM IF
L111
AM IF
C012
L W Osc.
C008
LW Ant.
L110
FM IF
TP4
Free Run
L102
SW
Ant.
L105
SW
Osc.
C011
MW
Osc.
C004
FM Osc.
L003
FM Osc.
L004
FM IF
C007
MW
Ant.
C002
FM
Ant.
C010
SW
Osc.
C006
SW Ant.
TP2
Ground
FM Ant.
L001
TP1
FM IN
LW
L104
Ant.
MW
L103

Figure 11.

TEST EQUIPMENT

1. Signal generator with a frequency range of at least from 140 kHz to 16 MHz AM.
2. Oscilloscope with a side range amplifier of approximately 100 kHz.
3. Test loop – a coil of any size wire, one turn or more. (LW & MW).
4. A 30 ohm dummy antenna. (SW)
5. VTVM

AM ALIGNMENT

1. Turn on the AM signal generator and the VTVM allowing a fifteen-minute warm-up period.
2. Using the test loop across the output of the signal generator, inductively connect the signal generator to the radio.
3. Connect the VTVM across the voice coil or a 3.2 ohm dummy load.
4. Set signal generator frequency as listed in ALIGNMENT CHART and maintain a sufficient output level to provide an indication on VTVM.
5. Set volume control at mid-position.
6. Proceed as outlined in the IF-LW, MW and SW ALIGNMENT CHART.

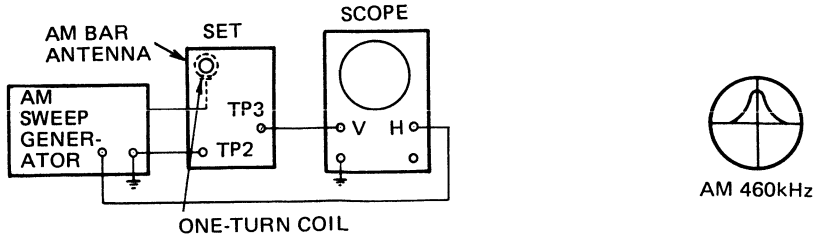

AM BAR
ANTENNA
SET
SCOPE
AM
SWEEP
GENER-
ATOR
TP3
TP2
V
H
ONE-TURN COIL
AM 460kHz

Figure 12.

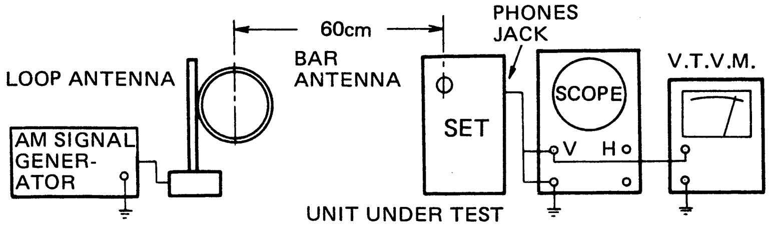

60cm
PHONES
JACK
LOOP ANTENNA
BAR
ANTENNA
SET
SCOPE
V.T.V.M.
AM SIGNAL
GENER-
ATOR
V
H
UNIT UNDER TEST

Figure 13.

MW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
IF	1	460 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	L109, L111	Adjust for maximum indication.
MW	2	510 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L106 (MW)	Adjust for maximum indication.
	3	1650 kHz	Tuning Gang Fully clockwise (Highest Frequency)	OSC. Trim C011	Adjust for maximum indication.
	4	Repeat steps 2 and 3 as required.			
	5	600 kHz	Tune to Signal.	Ant. Coil L103 (MW)	Adjust for maximum indication.
	6	1400 kHz	Tune to Signal.	Ant. Trim. C007	Adjust for maximum indication.
	7	Repeat steps 5 and 6 as required.			

LW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
LW	1	142 kHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L107	Adjust for maximum indication.
	2	280 kHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C012	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	160 kHz	Tune to Signal.	Ant. Coil L104	Adjust for maximum indication.
	5	280 kHz	Tune to Signal.	Ant. Trim. C008	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			

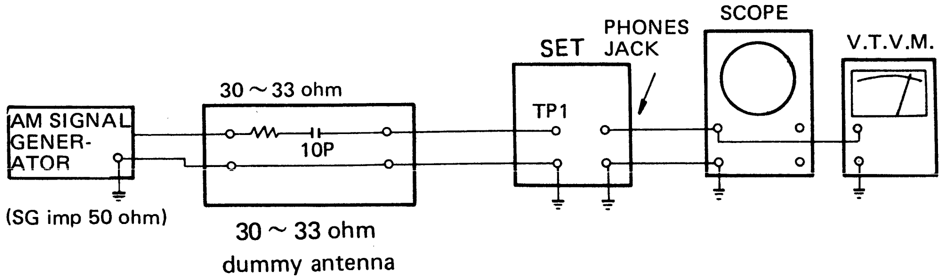

SET
PHONES
JACK
SCOPE
V.T.V.M.
30 ~ 33 ohm
10P
AM SIGNAL
GENER-
ATOR
TP1
(SG imp 50 ohm)
30 ~ 33 ohm
dummy antenna

Figure 14.

SW ALIGNMENT CHART

Band	Step	Signal Generator Frequency	Radio Dial Setting	Adjustment	Remarks
SW	1	5.75 MHz	Tuning Gang Fully Counter-clockwise (Lowest Frequency)	OSC. Coil L105	Adjust for maximum
	2	16 MHz	Tuning Gang Fully Clockwise (Highest Frequency)	OSC. Trim. C010	Adjust for maximum indication.
	3	Repeat steps 1 and 2 as required.			
	4	6.5 MHz	Tune to Signal.	Ant. Coil L102	Adjust for maximum indication.
	5	14 MHz	No Adjustment	Ant. Trim. C006	Adjust for maximum indication.
	6	Repeat steps 4 and 5 as required.			

FM-IF ALIGNMENT

1. Set the select switch to FM position.
2. Turn on both sweep generator and oscilloscope, and allow a fifteen-minute warm-up period.
3. Connect the RF SWEEP SIGNAL OUTPUT from the signal generator through the loop antenna to the receiver.
4. Connect the oscilloscope vertical input directly to the test point TURN OUT H and connect the shielded lead to the test point E or chassis ground.
5. Connect the SWEEP VOLTAGE OUTPUT of the sweep generator to the oscilloscope.
6. Proceed as outlined in the FM-IF ALIGNMENT CHART.

FM-IF ALIGNMENT CHART

Step					Adjust. point	
1	Connect sweep generator output to a three-turn loop antenna of 10cm diameter.	Sweep generator of 10.7 MHz center freq. with 10.7 MHz marker.	Tuning Knob fully counter-clockwise (Lowest Frequency.)	Set scope for connecting output signal from TUN OUT to vertical axis of scope "V" and sweep generator output to horizontal axis "H".	L004 L110	Turn the IF Transformer L110 fully counterclockwise to obtain a single peak. Adjust coil L004 in order until the best single peak is obtained. Figure 16. Finally turn the coil L110 to obtain S curve. See Figure 17.

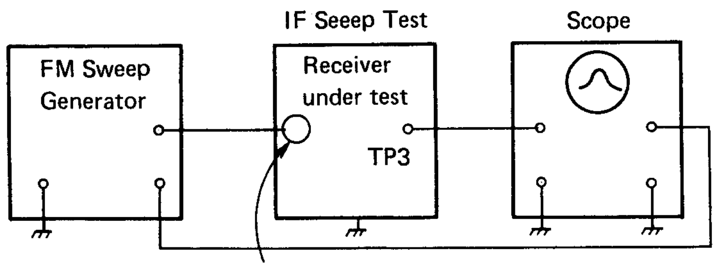


Figure 15. 3-turn Loop Antenna located near the L002.

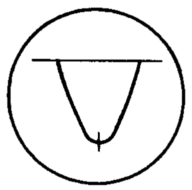


Figure 16.

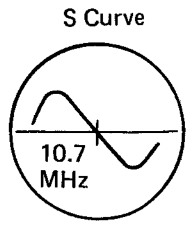


Figure 17.

FM-RF ALIGNMENT

1. Turn on the signal generator and the VTVM, and allow a fifteen-minute warm-up period.
2. Connect the signal generator output through a 75 ohm dummy antenna across FM ANT.
3. Connect the VTVM across the voice coil or a 3.2 ohm dummy load.
4. Set the volume control to mid-position.

5. Adjust the signal generator frequency as indicated in FM-RF ALIGNMENT CHART, and maintain a sufficient signal output level to provide a measurable indication.
6. Proceed as outlined in the FM-RM ALIGNMENT CHART.

FM-RF ALIGNMENT CHART

Step	Signal Generator	Radio Dial Setting	Adjustment	Remarks
1	87.5 MHz	Tuning Knob fully Counterclockwise (Lowest Frequency)	OSC. Coil L003	Adjust for maximum output indication
2	108 MHz	Tuning Knob fully Clockwise (Highest Frequency)	OSC. Trim. C004	Adjust for maximum output indication
3	Repeat steps 1 and 2 as required.			
4	90 MHz	Tune to signal	Ant. Coil L001	Adjust for maximum output indication
5	106 MHz		Ant. Trim. C002	
6	Repeat steps 4 and 5 as required.			

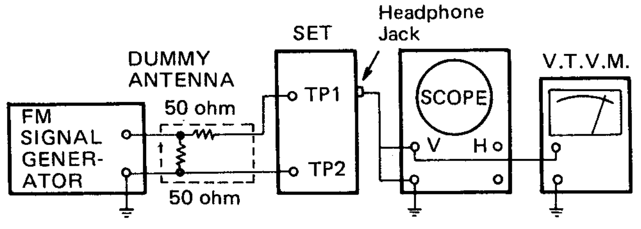


Figure 18.

FREE RUN FREQUENCY ALIGNMENT

Adjust R204 under no signal condition so as to obtain 38 kHz ± 75 Hz.

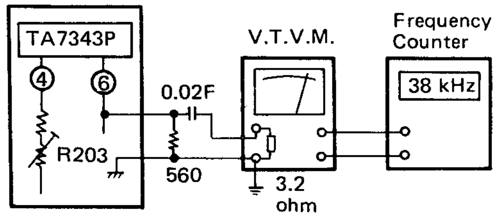


Figure 19.

CAUTION:

When realigning the FM Receiving Frequency, the highest end of the frequency range should not be move than 108 MHz and the lowest end of the frequency range should not be less than 87.5 MHz, in order to comply with FTZ regulations in West Germany.

RECORD/PLAYBACK HEAD ADJUSTMENT

A 6.3 kHz standard tape must be used for this adjustment. Connect a VTVM or an oscilloscope to the PHONES jack and adjust the forward azimuth and the reverse one by using a phillips screwdriver to maintain the maximum output voltage.

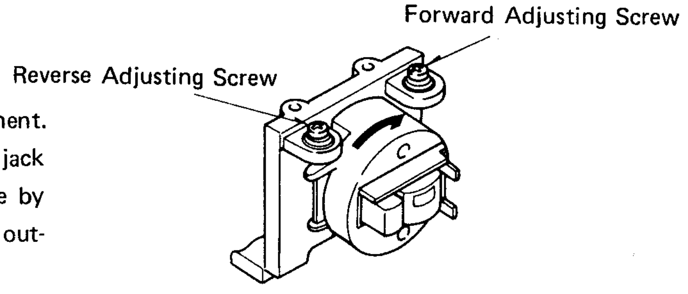
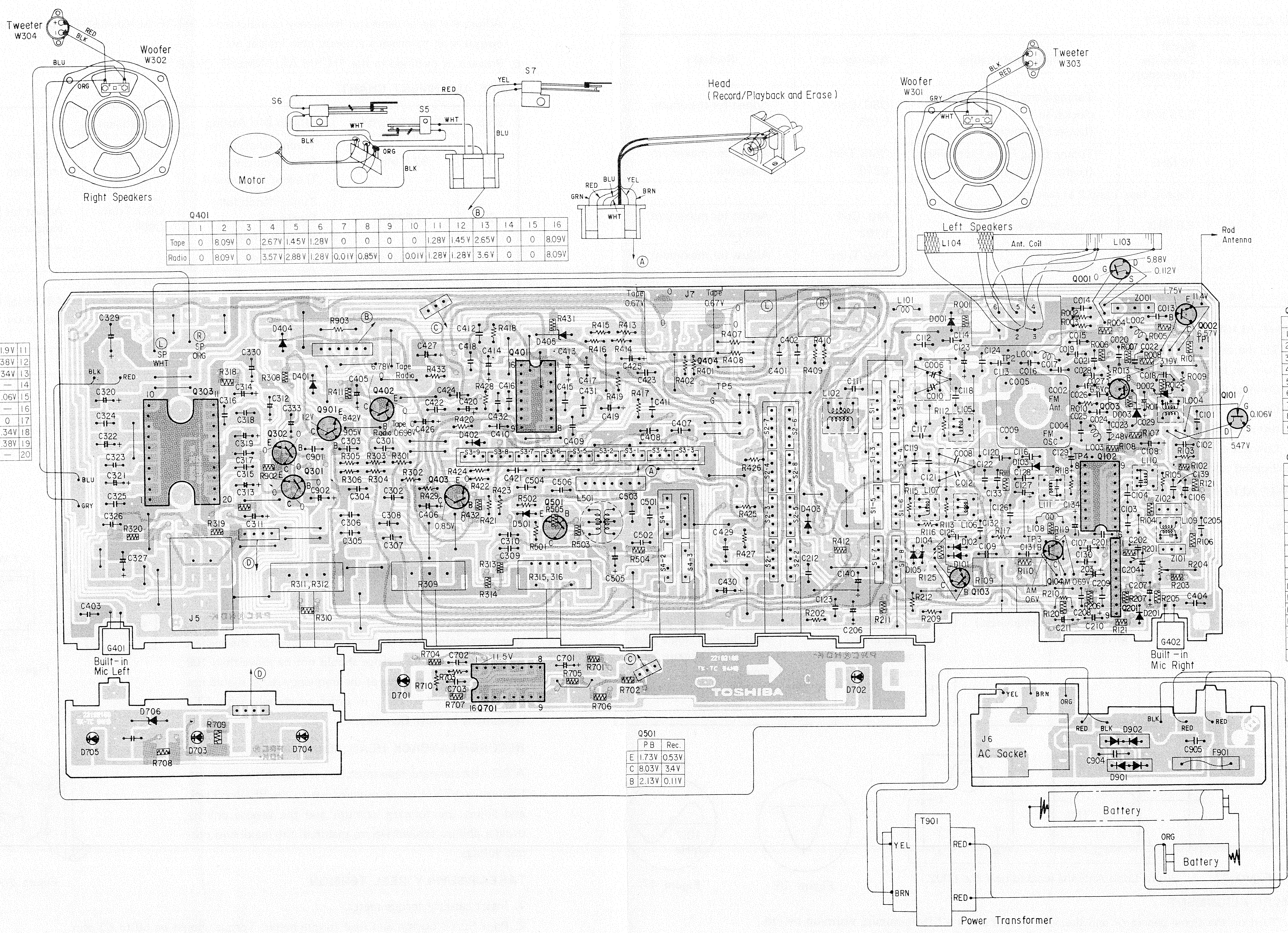


Figure 20.

TAKE-UP/SUPPLY REEL TENSION

1. Insert cassette torque meter.
2. Press PLAY button and read torque meter. Torque should be 30 to 60 gcm.
3. Release PLAY button and press REWIND button. Torque should be 75 to 150 gcm. If necessary, clean take-up reel or drive belt with alcohol, or replace belt.

8. ELECTRICAL PARTS LOCATIONS


Tweeter W304
Woofer W302
Right Speakers
Motor
S5
S6
S7
Head (Record/Playback and Erase)
Woofer W301
Tweeter W303
Left Speakers
L104
Ant. Coil
L103
Rod Antenna
Q001
Q002
Q101
Q103
Q104
Q201
Q301
Q302
Q303
Q401
Q402
Q403
Q501
Q701
Q901
J5
J6 AC Socket
J7
G401 Built-in Mic Left
G402 Built-in Mic Right
D701
D702
D703
D704
D705
D706
T901
Power Transformer
Battery
Battery
F901
D901
D902
TOSHIBA
RED
BLK
BLU
WHT
ORG
YEL
GRN
BRN
GRY

Q401

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Tape	0	8.09V	0	2.67V	1.45V	1.28V	0	0	0	0	1.28V	1.45V	2.65V	0	0	8.09V
Radio	0	8.09V	0	3.57V	2.88V	1.28V	0.01V	0.85V	0	0.01V	1.28V	1.28V	3.6V	0	0	8.09V

Q303

1	0	11.9V	11
2	6V	1.38V	12
3	—	1.34V	13
4	11.5V	—	14
5	12V	11.06V	15
6	5.89V	—	16
7	11.5V	0	17
8	—	1.34V	18
9	0	1.38V	19
10	12V	—	20

Q201

	FM	AM
1	3.35V	3.32V
2	5.68V	5.99V
3	7.07V	7.35V
4	6.24V	5.87V
5	0	0
6	6.8V	7.25V
7	6.47V	7.25V
8	3.5V	3.55V
9	3.6V	3.66V

Q102

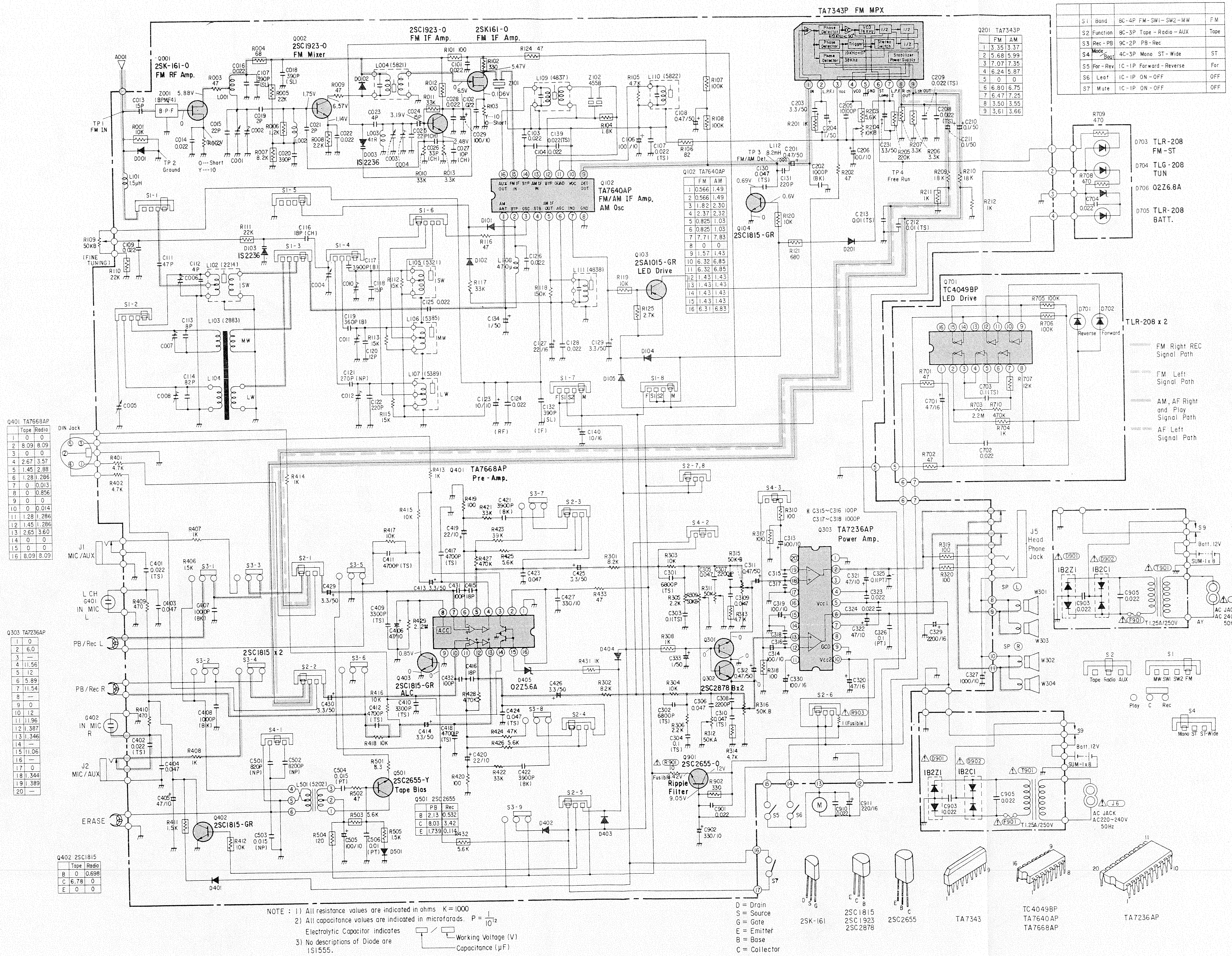
	FM	AM
1	0.56V	1.49V
2	0.56V	1.49V
3	1.82V	2.3V
4	2.37V	2.3V
5	0.82V	1.03V
6	0.82V	1.03V
7	7.7V	7.8V
8	0	0
9	1.57V	1.4V
10	6.3V	6.85V
11	6.3V	6.85V
12	1.4V	1.4V
13	1.4V	1.4V
14	1.4V	1.4V
15	1.4V	1.4V
16	6.3V	6.8V

Q501

	PB	Rec.
E	1.73V	0.53V
C	8.03V	3.4V
B	2.13V	0.11V

Figure 21.

9. SCHEMATIC DIAGRAM


TA7343P FM MPX
Q001 2SK-161-0 FM RF Amp.
Q002 2SC1923-0 FM Mixer
2SC1923-0 FM IF Amp.
2SK161-0 FM IF Amp.
Q102 TA7640AP FM/AM IF Amp. AM Osc
Q103 2SA1015-GR LED Drive
Q104 2SC1815-GR
Q701 TC4049BP LED Drive
D703 TLR-208 FM-ST
D704 TLG-208 TUN
D706 02Z6.8A
D705 TLR-208 BATT.
D701 D702 TLR-208 x 2
Reverse
Forward
FM Right REC Signal Path
FM Left Signal Path
AM, AF Right and Play Signal Path
AF Left Signal Path
Q401 TA7668AP Pre-Amp.
Q403 2SC1815-GR ALC
D405 02Z5.6A
Q303 TA7236AP Power Amp.
Q301 Q302 2SC2878 B x2
Q501 2SC2655-Y Tape Bias
Q402 2SC1815-GR
Q901 2SC2655-O Ripple Filter
J1 MIC/AUX
J2 MIC/AUX
L CH G401 IN MIC L
G402 IN MIC R
PB/Rec L
PB/Rec R
ERASE
DIN Jack
J5 Head Phone Jack
SP L
SP R
W301 W302 W303 W304
AC JACK AC 240V 50Hz
AC JACK AC220~240V 50Hz
Batt. 12V
SUM-1 x 8
TP1 FM IN
TP2 Ground
TP3 FM/AM Det.
TP4 Free Run
2SK-161
2SC1815 2SC1923 2SC2878
2SC2655
TA7343
TC4049BP TA7640AP TA7668AP
TA7236AP

	S1	Band	8C-4P FM-SW1-SW2-MW	FM
	S2	Function	8C-3P Tape-Radio-AUX	Tape
	S3	Rec-PB	9C-2P PB-Rec	
	S4	Mode/Beat	4C-3P Mono ST-Wide	ST
	S5	For-Rev	1C-1P Forward-Reverse	For
	S6	Leaf	1C-1P ON-OFF	OFF
	S7	Mute	1C-1P ON-OFF	OFF

Q201 TA7343P

	FM	AM
1	3.35	3.37
2	5.68	5.99
3	7.07	7.35
4	6.24	5.87
5	0	0
6	6.80	6.75
7	6.47	7.25
8	3.50	3.55
9	3.61	3.66

Q102 TA7640AP

	FM	AM
1	0.566	1.49
2	0.566	1.49
3	1.82	2.30
4	2.37	2.32
5	0.825	1.03
6	0.825	1.03
7	7.71	7.83
8	0	0
9	1.57	1.43
10	6.32	6.85
11	6.32	6.85
12	1.43	1.43
13	1.43	1.43
14	1.43	1.43
15	1.43	1.43
16	6.31	6.83

Q401 TA7668AP

	Tape	Radio
1	0	0
2	8.09	8.09
3	0	0
4	2.67	3.57
5	1.45	2.88
6	1.28	1.286
7	0	0.013
8	0	0.856
9	0	0
10	0	0.014
11	1.28	1.286
12	1.45	1.286
13	2.65	3.60
14	0	0
15	0	0
16	8.09	8.09

Q303 TA7236AP

1	0
2	6.0
3	—
4	11.56
5	12
6	5.89
7	11.54
8	—
9	0
10	12
11	11.96
12	1.387
13	1.346
14	—
15	11.06
16	—
17	0
18	1.344
19	1.389
20	—

Q402 2SC1815

	Tape	Radio
B	0	0.698
C	6.78	0
E	0	0

Q501 2SC2655

	PB	Rec
B	2.13	0.532
C	8.03	3.42
E	1.739	0.114

NOTE : 1) All resistance values are indicated in ohms K = 1000
2) All capacitance values are indicated in microfarads. $P = \frac{1}{10^{12}}$
Electrolytic Capacitor indicates ☐ / ☐ Working Voltage (V) Capacitance (μF)
3) No descriptions of Diode are 1S1555.

D = Drain
S = Source
G = Gate
E = Emitter
B = Base
C = Collector

Figure 22.

10-1. MECHANISM EXPLODED VIEW (UPPER)

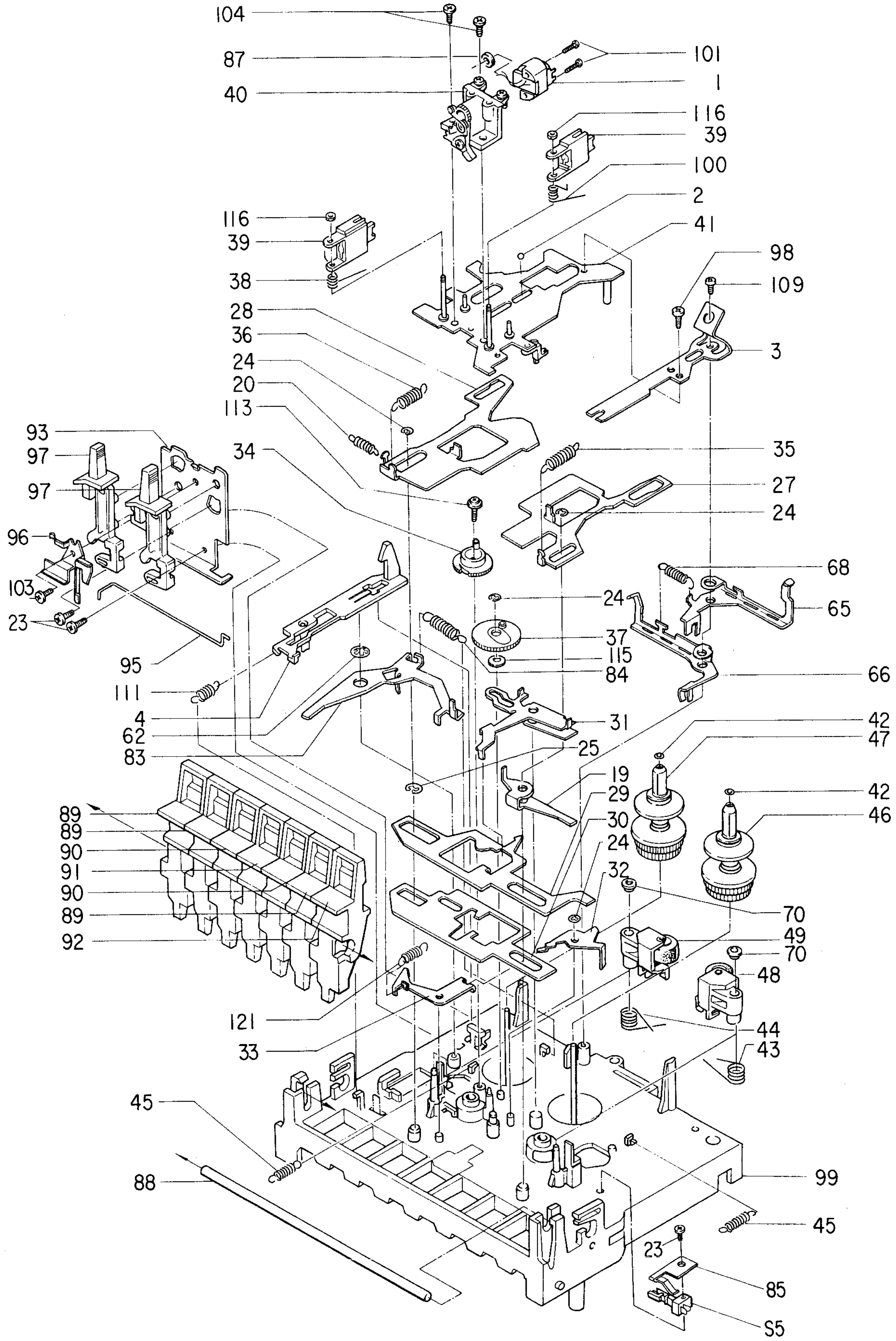

104
87
40
101
1
116
39
100
2
41
116
39
38
98
109
28
36
24
20
113
3
34
35
27
24
93
97
97
96
103
23
68
65
24
37
115
84
95
111
4
62
83
66
31
25
42
47
19
29
30
24
32
42
46
89
89
90
91
90
89
92
70
49
70
48
121
33
44
43
45
88
99
45
23
85
S5

Figure 23.

NOTE: Excluded parts in the Parts List are not available as replacement parts.

10-2. MECHANISM EXPLODED VIEW (LOWER)

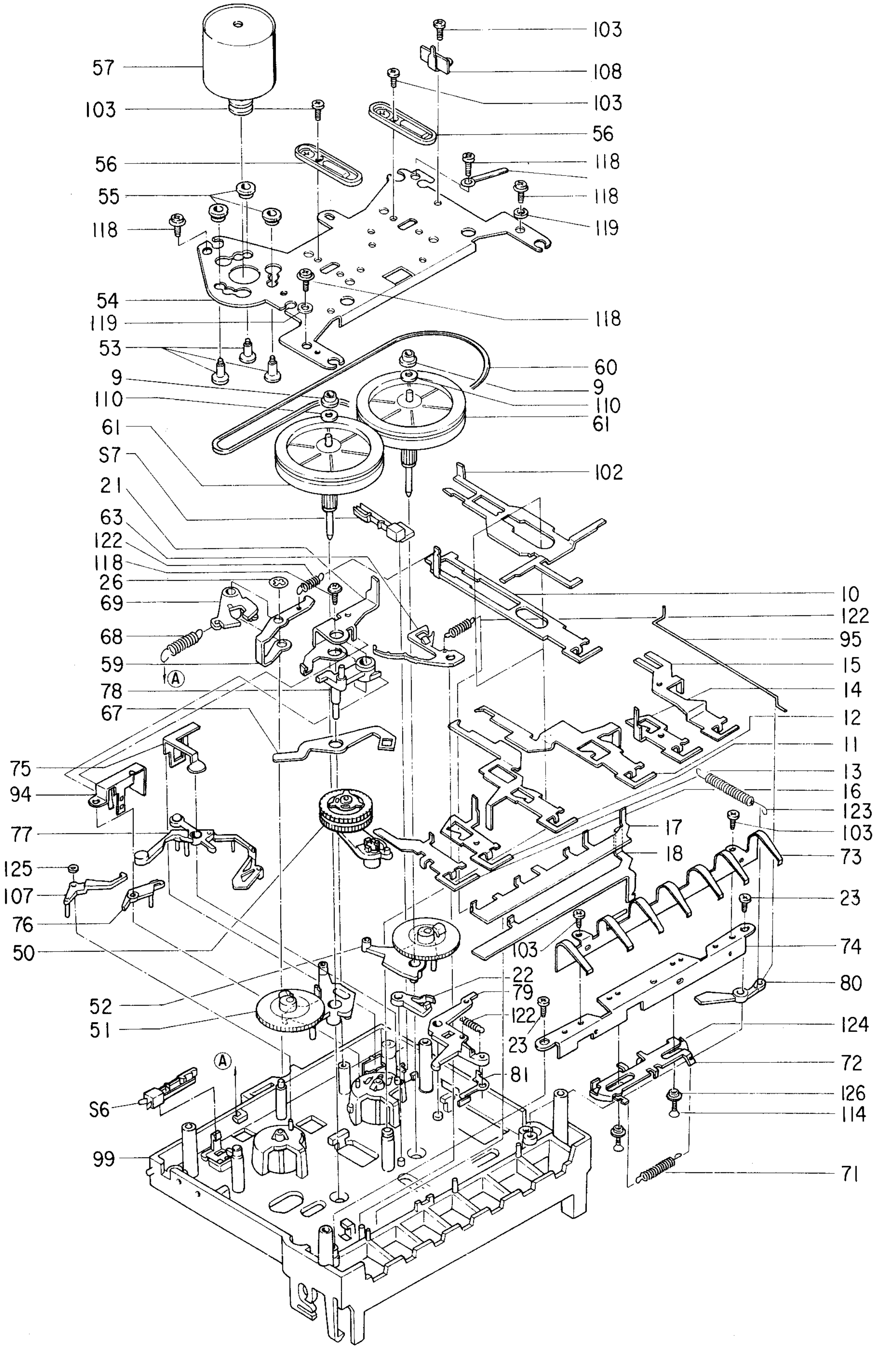

103
57
108
103
103
56
56
118
55
118
118
119
54
118
119
53
60
9
9
110
110
61
61
S7
102
21
63
122
118
26
10
122
69
95
68
15
59
Ⓐ
14
78
12
67
11
75
13
94
16
123
77
17
103
18
73
125
107
23
76
74
103
50
22
79
80
52
51
122
124
23
81
72
Ⓐ
126
S6
114
99
71

Figure 24.

NOTE: Excluded parts in the Parts List are not available as replacement parts.

11. PARTS LIST (MECHANISM)

Symbol No.	Part No.	Description
CASSETTE MECHANISM PARTS		
1	22217387	Head, Record/Playback/Erase HRPET-97
2	25757129	Steel Ball, 2mmd, Head Slider Ass'y
4	25782463	Slider, Cassette Lock
9	25725340	Holder, Flywheel
10	25741871	Operation Plate, Record
11	25741872	Operation Plate, Play, Right
12	25741873	Operation Plate, Play, Left
20	25776376	Spring, Play Slider, Left
21	25782456	Lever, Pause Lock
22	25782457	Lever, Play Lock
23	22707368	Screw, DTBID Hd., 2.6d x 10mmℓ
24	22703118	Retaining Ring, 2mmd
25	22703279	Retaining Ring, 3mmd, Reverse Slider
26	20798037	Ring, Cue Lever
34	25791401	Reverse Gear Ass'y
35	25776377	Spring, Tension
37	25791381	Reverse Gear Ass'y
38	25778020	Spring, Tape Guide, Left
39	25783246	Tape Guide
40	25791377	Head Holder Ass'y
41	25791385	Head Slider Ass'y
42	25766050	Washer, Reel Plate
43	25773571	Spring, Pressure Roller, Right
44	25773572	Spring, Pressure Roller, Left
45	25776372	Spring, Main Chassis
46	25712398	Reel Plate Ass'y, Right
47	25712399	Reel Plate Ass'y, Left
48	25717492	Pressure Roller, Right
49	25717493	Pressure Roller, Left
50	25791378	High Speed Lever Ass'y
51	25791379	Take-up Lever Ass'y, Right
52	25791380	Take-up Lever Ass'y, Left
53	22707429	Screw, Special, Motor 2.6d x 4.9mmℓ
55	25761238	Cushion, Motor
56	25783245	Thrust Plate
57	22125762	Motor
58	25758100	Pulley, Motor
60	25755506	Belt, Drive
61	25717494	Flywheel Ass'y
62	20798033	Ring, Switch Slider
68	25776373	Spring, Record Lock Lever
69	25782455	Lever, Recording Stop
70	25783260	Bushing, Pressure Roller
71	25776439	Spring, High Speed Shift
73	25779193	Spring, Operation Plate
76	25782450	Lever, Detect
77	25791423	ASO Lever Ass'y
78	25782452	Bias Lever
79	25782453	Release Lever
80	25782454	Limit Lever
82	22706010	Ring, CS-5
84	25776378	Spring, Switch Lever
89	25782465	Button, Stop/Open, Cue, Review
90	25782466	Button, Play Operation Plate
91	25782467	Button, Record Operation Plate
92	25782468	Button, Pause Operation Plate
97	25791411	Button Ass'y, Reverse
98	22707300	Screw, BID Hd., Tapping 2.6d x 6mmℓ
99	25791421	Chassis Ass'y, Main
100	25773592	Spring, Tape Guide, Right
101	22702173	Screw, PAN Hd., 1.4d x 6mmℓ, BLK
103	22707350	Screw, DTBID Hd., 2.6d x 5mmℓ
104	22707426	Screw, DTBID Hd., 2d x 5mmℓ
107	25782491	Lever, Detect
109	22707299	Screw, BID Hd., Tapping, 2d x 8mmℓ, Holder Spring
110	25764486	Washer, Flywheel
111	25776374	Spring, Cassette Lock Slider
113	22707755	Screw, TPAN 2d x 4mmℓ with Washer
114	22701354	Screw, FLT Hd., 2d x 6mmℓ
115	25766070	Washer, Reverse Gear
116	25783258	Adjusting Nut
118	22707361	Screw, TPAN Hd., 2.6d x 8mmℓ with Washer
121	25776500	Spring, Gear Lock Lever
122	25776402	Spring
123	25776380	Spring
124	25741912	Slider, High Speed Shift
125	25783199	Washer

12. CABINET EXPLODED VIEW

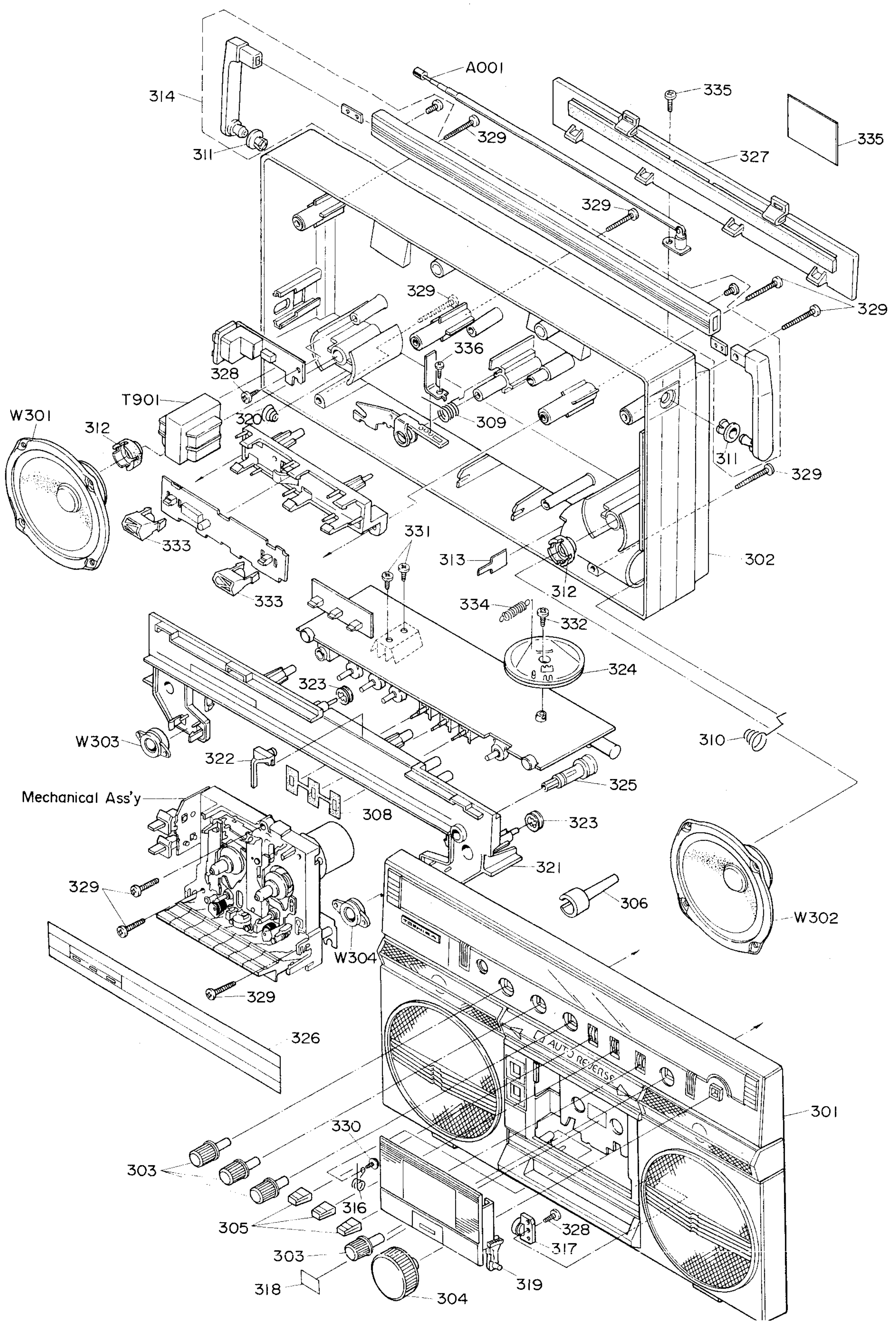


Figure 25.

NOTE: Excluded parts in the Parts List are not available as replacement parts.

13. PARTS LIST (CABINET)

Symbol No.	Part No.	Description
CABINET PARTS		
301	25881534	Cabinet Front Ass'y
302	25881536	Cabinet Back Ass'y
303	25837629	Knob, Tone
304	25837650	Knob, Tuning
305	25837651	Knob, Lever Switch
306	25848002	Mold Stud
308	25857093	Cover, Switch
309	25773586	Return Spring
310	25776501	Battery Spring, Left
311	25835411	Washer, Handle
312	25857039	Speaker Cushion
313	25864166	Contact, Battery
314	25881639	Handle Ass'y
316	25778057	Spring, Torsion, Cassette
317	25881493	Damper Ass'y
318	25824247	Reflector, Cassette Lid
319	25881469	Cassette Cover Ass'y
320	22771355	Battery Spring
321	22714183	Tuner Frame
322	22741395	Pointer
323	22742285	Pulley
324	22742269	Dial Drum
325	22743309	Tuning Shaft
326	25808288	Dial Plate
327	25881495	Cover Ass'y, Battery
328	22707802	Screw, DTBID Hd., 3d x 12mmℓ Tapping
329	22707865	Screw, DTBID Hd., Tapping 3d x 20mmℓ
330	22707852	Screw, TPAN Hd., Tapping 3d x 12mmℓ with Sasher
331	22707169	Screw, BID Hd., 2.6d x 10mmℓ
332	22707473	Screw, BID Hd., 2.6d x 6mmℓ Drum
333	22714206	Guide, LED
334	25776387	Spring, Drum
335	25808319	Nameplate, Main, TE, TU
335	25808423	Nameplate, Main, IT

14. PARTS LIST

CAUTION: The ⚠ mark, the symbol No. circled with rectangle in the schematic diagram and the shaded area in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

Symbol No.	Part No.	Description
TRANSISTORS, ICS & DIODES		
Q001	A6042630	Transistor, 2SK161-O
Q002	A6319020	Transistor, 2SC1923-O
Q003	A6319020	Transistor, 2SC1923-O
Q101	A6042630	Transistor, 2SK161-O
Q102	B0356385	IC, TA7640AP
Q103	A6534060	Transistor, 2SA1015-GR
Q104	A6317460	Transistor, 2SC1815NEW-GR
Q201	B0325350	IC, TA7343P
Q301, 302	A6342210	Transistor, 2SC2878-B
Q303	B0320075	IC, TA7236AP
Q401	B0356690	IC, TA7668AP
Q402, 403	A6317460	Transistor, 2SC1815NEW-GR
Q501, 901	A6333320	Transistor, 2SC2655-Y
Q701	B0470494	IC, TC4049BP
D001, 002	A7246703	Diode, 1S1555V
D003	A7289000	Diode, 1S2236
D101, 102	A7246703	Diode, 1S1555V
D103	A7289003	Diode, 1S2236
D104, 105	A7246703	Diode, 1S1555V
D201	A7246703	Diode, 1S1555V
D401, 402, 403, 404, 501	A7246703	Diode, 1S1555V
D405	A7285900	Diode, Zener, 02Z5.6A
D701, 702	A8603140	Diode, LED, TLR208, Forward/Reverse
D703	A8603140	Diode, LED, TLR208, FM-ST
D704	A8606660	Diode, LED, TLG208, Tuning Indicator
D705	A8603140	Diode, LED, TLR208, Battery Indicator
D706	A7286300	Diode, Zener, 02Z6.8A
⚠ D901	A7682052	Diode, 1B2Z1(T), Rectifier
⚠ D902	A7682012	Diode, 1B2C1(T), Rectifier
COILS & TRANSFORMERS		
L001	22294460	Coil, FM RF
L002	22294361	Coil, Antenna, FM
L003	22294019	Coil, FM
L004	22265821	IF Transformer, FM
L101	22291103	Coil, Choke, 1.5uH
L102	22282214	Coil, Antenna, SW
L103	22282233	Coil, Antenna
L103, 104	22242883	Coil, Antenna, LW/MW
L105	22285321	Coil, Oscillator, SW
L106	22245385	Coil, Oscillator, MW
L107	22245389	Coil, Oscillator, LW
L108	22230106	Coil, Choke, 470uH
L109	22264837	IF Transformer, AM
L110	22265822	IF Transformer, AM
L111	22264838	IF Transformer, FM
L112	22232219	Coil, Choke, 8.2mH
L501	22235202	Coil, Oscillator, Tape
⚠ T901	22224153	Power Transformer
ELECTRICAL PARTS		
S1	22195910	Switch, Lever, Band Select
S2	22195944	Switch, Lever, Tape-Radio-AUX
S3	22195878	Switch, Slide, Record/Playback
S4	22195943	Switch, Lever, Mono-ST.-Wide
S5	22195983	Switch, Leaf, Forward-Reverse
S6	22195885	Switch, Leaf, Motor ON-OFF
S7	22195885	Switch, Leaf, Muting ON-OFF
J1, 2	22163865	Jack, MIC/AUX
J5	22163880	Jack, Headphone
⚠ J6	22167901	AC Socket, 2P
J7	22167821	Jack, DIN, 5 Pin
Z001	22153228	Filter, FM Bypass
Z101	22153058	Filter, Ceramic
Z102	22153083	Filter, Ceramic, 460B
A001	22124491	Rod Antenna
G401, 402	22154233	Built-in Microphone, EM-100S
W301, 302	22152374	Speaker, Woofer, 120mm
W303, 304	22152408	Speaker, Tweeter, 20mm
⚠ F901	22144293	Fuse, 1.25A/250V
EP01	22165047	Fuse Holder
EP02	22167688	Back Cover, Jack
CAPACITORS **Voltage Ratings of Ceramic and Plastic Film Capacitor are 50V DC unless otherwise noted.** **D = ±0.5pF, J = ±5%, K = ±10%, M = ±20%, Z = –20+80%** **ABBREVIATIONS: CD = Ceramic Disk, EL = Electrolytic, PF = Plastic Film**		
C001, 002, 003, 004, 005	22308235	Tuning Capacitor with Trimmer
C006, 010	22309183	Trimmer, SW Ant./Osc.
C008, 012	22309184	Trimmer, LW Ant./Osc.
C013	22362150	CD, 15pF, K
C014	22342223	CD, 0.022mfd, Z
C015	22362220	CD, 22pF, K
C016	22342223	CD, 0.022mfd, Z

Symbol No.	Part No.	Description
C017	22362391	CD, 390pF, K
C018	22362391	CD, 390pF, K
C019	22361209	CD, 2pF, D
C020	22362391	CD, 390pF, K
C021	22361209	CD, 2pF, D
C022	22342223	CD, 0.022mfd
C023	22361409	CD, 4pF, D
C024	22360132	CD, 15pF, J (CH)
C025	22360134	CD, 22pF, J (CH)
C026	22360136	CD, 33pF, J (CH)
C027	22360310	CD, 10pF, D (CH)
C028	22342223	CD, 0.022mfd
C029	22483101	EL, 100mfd, 10V
C101, 102	22342223	CD, 0.022mfd, Z
C103, 104	22342223	CD, 0.022mfd, Z
C106	22483101	EL, 100mfd, 10V
C107	22342223	PF, 0.022mfd, Z
C108	22488478	EL, 0.47mfd, 50V
C109	22342223	CD, 0.022mfd, Z
C110	22362470	CD, 47pF, K
C111	22362470	CD, 47pF, K
C113	22361809	CD, 8pF, D
C114	22362820	CD, 82pF, K
C116	22360133	CD, 18pF, J (CH)
C117	22349392	CD, 3900pF, K
C118	22361150	CD, 15pF, D
C119	22321016	CD, 360pF, J
C120	22362120	CD, 12pF, K
C121	22321048	PF, 270pF, J
C122	22321164	CD, 220pF, J
C123	22485100	EL, 10mfd, 16V
C124, 125	22342223	CD, 0.022mfd, Z
C126	22342223	CD, 0.022mfd, Z
C127	22485220	EL, 22mfd, 16V
C128	22342223	CD, 0.022mfd, Z
C129	22488339	EL, 3.3mfd, 50V
C130	22360331	PF, 0.047mfd, M
C131	22362221	CD, 220pF, K
C132	22362391	CD, 390pF, K
C134	22488109	EL, 1mfd, 50V
C139	22360329	PF, 0.022mfd, M
C140	22485100	EL, 10mfd, 16V
C201	22488478	EL, 0.47mfd, 50V
C202	22362102	CD, 1000pF, K
C203	22488339	EL, 3.3mfd, 50V
C204	22488109	EL, 1mfd, 50V
C205	22321057	PF, 1000pF, J
C206	22483101	EL, 100mfd, 10V
C207	22488339	EL, 3.3mfd, 50V
C208, 209	22360329	PF, 0.022mfd
C210, 211	22488108	EL, 0.1mfd, 50V
C212, 213	22360327	PF, 0.01mfd
C301, 302	22360326	PF, 6800pF, M
C303, 304	22360333	PF, 0.1mfd, M
C305, 306	22342473	CD, 0.047mfd, Z
C307, 308	22349222	CD, 2200pF, K
C309, 310	22360331	PF, 0.047mfd, M
C311, 312	22488478	EL, 0.47mfd, 50V
C313, 314	22483101	EL, 100mfd, 10V
C315, 316	22362101	CD, 100pF, K
C317, 318	22349102	CD, 1000pF, K
C319	22483101	EL, 100mfd, 10V
C320	22485470	EL, 47mfd, 16V
C321, 322	22483470	EL, 47mfd, 10V
C323, 324	22342223	CD, 0.022mfd, Z
C325, 326	22372104	PF, 0.1mfd, K
C327	22483102	EL, 1000mfd, 10V
C329	22485222	EL, 2200mfd, 16V
C330	22485101	EL, 100mfd, 16V
C333	22488109	EL, 1mfd, 50V
C401, 402	22360329	PF, 0.022mfd, M
C403, 404	22342473	CD, 0.047mfd, Z
C405, 406	22483470	EL, 47mfd, 10V
C407, 408	22349102	CD, 1000pF, K
C409, 410	22360324	PF, 3300pF, M
C411, 412	22360325	PF, 4700pF, M
C413, 414	22488339	EL, 3.3mfd, 50V
C415, 416	22362180	CD, 18pF, K
C417, 418	22360325	PF, 4700pF, M
C419, 420	22485220	EL, 22mfd, 10V
C421, 422	22349392	CD, 3900pF, K
C423, 424	22360331	PF, 0.047mfd, M
C425, 426	22488339	EL, 3.3mfd, 50V
C427	22483331	EL, 330mfd, 10V
C429, 430	22488339	EL, 3.3mfd, 50V
C431, 432	22362101	CD, 100pF, K
C501	22321056	PF, 820pF, J
C502	22321123	PF, 8200pF, J
C503, 504	22371153	PF, 0.015mfd, J, 100V
C505	22483101	EL, 100mfd, 10V
C506	22371103	PF, 0.01mfd, J
C701	22485470	EL, 47mfd, 16V
C702	22342223	CD, 0.022mfd, Z
C703	22360333	PF, 0.1mfd
C704	22342223	CD, 0.022mfd, Z
C901	22342223	CD, 0.022mfd, Z
C902	22483331	EL, 330mfd, 10V
C904, 906	22342223	CD, 0.022mfd, Z
C903, 905	22342223	CD, 0.022mfd, Z
C910	22342223	CD, 0.022mfd, Z
C911	22485221	EL, 220mfd, 16V

RESISTORS

1. Resistors are carbon film ¼W, ±5% unless otherwise noted.
2. PRC is short for the Printed Resistor Circuit. If replacement of the resistor in PRC is requid. Please use the substitutional fixed carbon film resistor of ¼W, ±5% according to the following list.

K = 1000, M = 1,000,000

Symbol No.	Part No.	Description
R001	22545103	10K ohm (PRC)
R002	22584100	10 ohm
R003	22584470	47 ohm
R004	22545680	68 ohm (PRC)
R005	22545224	22K ohm (PRC)
R006	22545122	1.2K ohm (PRC)
R007	22545822	8.2K ohm (PRC)
R008	22545222	2.2K ohm (PRC)
R009	22584470	47 ohm
R010, 011	22584333	33K ohm
R012	22545101	100 ohm (PRC)
R013	22584332	3.3K ohm
R101	22545101	100 ohm (PRC)
R102	22545331	330 ohm (PRC)
R103	22584100	10 ohm
R104	22545182	1.8K ohm (PRC)
R105	22584472	4.7K ohm
R106	22545820	82 ohm (PRC)
R107	22545104	100K ohm (PRC)
R108	22545104	100K ohm (PRC)
R109	22625014	Variable, 50K-B, Fine Tuning
R110	22545223	22K ohm (PRC)
R111	22545223	22K ohm (PRC)
R112, 113	22584153	15K ohm
R115	22584153	15K ohm
R116	22584470	47 ohm
R117	22584333	33K ohm
R118	22584154	150K ohm
R119	22545103	10K ohm (PRC)
R120	22545103	10K ohm (PRC)
R121	22545681	680 ohm (PRC)
R124	22545470	47 ohm (PRC)
R125	22545272	2.7K ohm (PRC)
R201	22545102	1K ohm (PRC)
R202	22584470	47 ohm
R203	22545562	5.6K ohm (PRC)
R204	22658599	Semi-fixed Variable, 10K-B, Free Run
R205	22545224	220K ohm (PRC)
R206, 207	22545332	3.3K ohm (PRC)
R209, 210	22584183	18K ohm
R211	22545102	1K ohm (PRC)
R212	22584102	1K ohm
R301, 302	22584822	8.2K ohm

Symbol No.	Part No.	Description
R303, 304	22584103	10K ohm
R305, 306	22584222	2.2K ohm
R308	22545102	1K ohm (PRC)
R309	22625014	Variable, 50K-B, Balance
R310	22545101	100 ohm (PRC)
R311, 312	22651564	Variable, 50K-A, Tone
R313, 314	22545472	4.7K ohm (PRC)
R315, 316	22651622	Variable, 50K-B, Volume
R317, 318	22545101	100 ohm (PRC)
R319, 320	22545101	100 ohm (PRC)
R401, 402	22584472	4.7K ohm
R407, 408	22545102	1K ohm
R409, 410	22584471	470 ohm
R411	22545152	1.5K ohm (PRC)
R412	22545103	10K ohm (PRC)
R413, 414	22545102	1K ohm
R415	22584103	10K ohm
R416	22584103	10K ohm
R417, 418	22584103	10K ohm
R419, 420	22584101	100 ohm
R421, 422	22584333	33K ohm
R423, 424	22584393	39K ohm
R425, 426	22584562	5.6K ohm
R427, 428	22584474	470K ohm
R429	22584225	2.2M ohm
R431	22545102	1K ohm (PRC)
R432	22545562	5.6K ohm (PRC)
R433	22584100	47 ohm
R435, 436		
R501	22584339	3.3 ohm
R502	22584470	47 ohm
R503	22545562	5.6K ohm (PRC)
R504	22545121	120 ohm (PRC)
R505	22545152	1.5K ohm (PRC)
R701, 702	22545470	47 ohm (PRC)
R703	22584225	2.2M ohm
R704	22545102	1K ohm (PRC)
R705, 706	22545104	100K ohm (PRC)
R707	22545123	12K ohm (PRC)
R708, 709	22545470	47 ohm (PRC)
R710	22584474	470K ohm
⚠ R901	22500130	10 ohm, Fusible
R902	22545331	330 ohm (PRC)
⚠ R903	22500166	1 ohm, Fusible
ACCESSORIES		
AC01	22903458	Owner's Manual, TE, IT
⚠ AC02	22176616	Power Supply Cord, TE, IT
⚠ AC03	22176626	Power Supply Cord, TU
AC04	22105344	Demonstration Tape, C-5